QUALIFICATIONS
MT CLASS 4 CAREER AND TECHNICAL EDUCATOR LICENSE

The Class 4 Career and Technical Educator License is valid for a period of five years.

INITIAL (first Montana license) REQUIREMENTS

Apply for a Class…	If you have…	And can document, as verified by employers, a minimum of…
4A	A Montana Class 1 or 2 Teaching License	10,000 hours (5 years) of work experience in **EACH** of the areas requested for endorsement. This license is issued to candidates who have worked in these industries, and have work experience in the field.
4B	A bachelor's or master's degree	
4C	No degree, but a high school diploma or GED	

ENDORSEMENTS AVAILABLE

Career Field	Endorsements Available	Career Field	Endorsements Available
Agriculture, Food & Natural Resources	Agriculture Business, Marketing & Communications	**Industrial, Manufacturing & Engineering Systems**	Auto Body
	Agriculture Mechanics		Automotive Technology
	Horticulture		Aviation
	Livestock Production		Building Maintenance
	Plant & Soil Sciences		Building Trades
Arts & Communications	Graphic Arts		Diesel Mechanics
	Theater Arts		Drafting
	Videography		Electronics
Business Management & Information Systems	Computer Information Systems		Heavy Equipment Operator
	Culinary Arts		Industrial Mechanics
Health Sciences	Health Occupations		Machining
			Metals
			Small Engines
			Welding

Applicants for the Class 4 Career and Technical License must provide documentation of work experience in all or most of the skills required for each endorsement totaling 10,000 hours (5 years or more). Required Knowledge and Skills for each endorsement are listed on subsequent pages. **Acceptable documentation includes**:

- **Verification of Work Experience Form(s)** (page 3 of the application), completed by as many employers as necessary to document the skills as well as the length of time employed. Job duties must be clearly outlined by the employer.
- For self employed candidates, **Profit/Loss tax statements** or other documentation of the existence of a business, making it clear that the applicant was part of the business.
- For Health Occupations and Computer Information Systems, an **industry standard certificate or license AND** evidence of an **internship or apprenticeship** combined with work experience.
- **Teaching experience** in the endorsement area may be included, but will be evaluated at the time of application.
- **A resume or other documents, including examples of work projects** may be helpful if the work experience from employers is not clear.

*****It is incumbent on the applicant to provide appropriate and complete documentation of their work history. In many instances, the application and work experience will be reviewed by the appropriate Specialist in the Career and Technical and Adult Education Division to ensure that the applicant's work experience is appropriate for the requested endorsement.***

Agriculture, Food & Natural Resources	Agriculture Business, Marketing And Communications	Agriculture Mechanics	Livestock Production	Plant And Soil Sciences	Horticulture
	• Recordkeeping • Fiscal Analysis • Budgeting • Marketing • Sales and Service • International Agriculture • Ag Communications • Precision Agriculture • Food Production Chain (i.e. production to consumer) • Financing and Credit • Understanding Cost Analysis • Computer Functionality and Use • Understanding Futures, Options and Price Protection • Utilizing Non-Traditional Marketing (e.g. Internet, Farmer's Markets, Branded Products, Direct Distribution) • Utilizing Government Programs and Resources • American Agriculture Policy (e.g. Farm Bill) • Rural Economic Development • Principles of Advertising, Promotion and Sales • Business Communications and Job Application Proficiency • Successful Interviewing Techniques • Planning Marketing and Public Relations Campaigns • International Outreach and Communication • Personal Leadership Development • Agricultural Agencies and Information Transfer	• General Ag Shop Operations and Safety • Building Construction • Metal Fabrication • Wood Construction • Concrete Construction • Plumbing • Wiring • Land Surveying • Power Technology	• Livestock Care and Management • Veterinary Care • Production • Sales and Service • Feeding and Nutrition • Artificial Insemination, Embryo Transfer and Reproduction • Livestock Equipment and Facilities • Livestock Processing and Marketing • Livestock Handling and Safety • Animal Breeds and Genetics • Health and Pharmaceutical Protocol • Entomology and Parasitology • Livestock Products and By-Products • Food Production and Safety • Heat Detection and Artificial Insemination • Meat Identification and Evaluation • Live Animal Identification and Evaluation	• Crop Identification and Production • Agronomic Practices • Forage Production • Grazing Management • Plant Genetics and Breeding • Plant Physiology • Precision Agriculture and GPS Applications in Agriculture • Soil Fertility and Amendments • Weed Management and Control • American Agricultural Policy (e.g. Farm Bill) • Agriculture Machinery and Equipment	• Greenhouse Management and Production • Nursery Management and Production • Floriculture • Landscaping • Turfgrass Management and Production • Horticulture Food Crop Production

	Graphic Arts	Theater Arts	Video And Filmmaking
Arts & Communications	• General Lab Safety • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Communication • Composition • Illustration • Annotation • Graphic Design Software Application and Implementation • Visual Design & Layout Concepts • Commercial and Industrial Design • Animation • Multimedia • Audio & Video Editing • Typography (style, arrangement, & appearance) • Photography • Darkroom Techniques	An instructor endorsed in Theater Arts will have a working knowledge in all areas of stagecraft (lights sound sets costume and make up) and all phases of production implementation. Admission to IATSE as a member in good standing or USITT with a proven production record would be preferable. The candidate should have proven track experience on general crew calls or self-employment in productions and should have thorough training in general shop/Lab Safety & related Environmental issues pertaining to theater production and exhibit expertise in the majority of the following Areas • Specific Safety Practice – pertaining to theatrical production and procedures. • State and Local Fire Codes as pertaining to theatrical production and auditoriums. • Federal State and Local Electrical codes as pertaining to theatrical production (especially for lighting and set practical). • State and Local building codes as pertaining to set and construction and performer / audience safety. • Knowledge of Theatrical hierarchy and crew structure. • Blueprint / Plot / Plan reading. • Stage Carpentry / construction. • Technical Direction. • Working knowledge of crew work on sets, props, electrics, costumes, make up, and craft services. • Knowledge of Basic Electronic Circuits and troubleshooting as pertaining to lights sets and sound systems. • Set / Drop painting technique and paint procedures. • Basic cutting / stitching. • Basic make up design and implementation. • Crew position tasks and responsibilities • Collaborative planning and execution of design tasks. • Proven design and implementation of Light, Set, Sound, costume and Make up designs. • Portfolio and Resume design and preparation specific to technical theater.	An instructor endorsed in Video and Filmmaking will have a working knowledge in all areas of video planning and implementation and exhibit expertise in the majority of the following areas: • Specific Safety Practice – pertaining to video production and procedures. • State and Local Fire Codes as pertaining to video production and auditoriums. • Federal State and Local Electrical codes as pertaining to video production (especially for lighting and set practical). • State and Local building codes as pertaining to set and construction and performer / audience safety. • Knowledge of video crew hierarchy and structure. • Blueprint / Plot / Plan reading. • Video Carpentry / construction. • Technical Direction. • Knowledge of Basic Electronic Circuits and troubleshooting as pertaining to video signal chain, lights sets and sound systems. • Camera operation and maintenance. • Scripting / planning for video production • Video Lighting and safety. • Teleprompter use. • Video signal chain – studio and field. • Audio techniques for video and post production. • Be familiar with NTSC standards both analogue and digital. • Scripting and Storyboarding. • NLE and A/B roll editing. • Portfolio and Resume design and preparation specific to Video Production.

	COMPUTER INFORMATION SYSTEMS	CULINARY ARTS
Business Management & Information Systems	• Networking skills as it relates to business application environments • Computer operating systems and architecture • Programming skills - knowledge of one or more computer languages (i.e. COBOL, JAVA, C++, HTML, BASIC) • Database concepts, management structures, analysis; database management • Software management systems and data communications • Web design applications appropriate for secondary level	An instructor endorsed in Culinary Arts will have a basic knowledge in all areas and exhibit expertise in a majority of the topics for the appropriate classroom levels: Middle School Classes • Healthy food choices • Teenage nutrition • Basic food preparation • Kitchen sanitation • Kitchen safety Freshman and Sophomore Classes • Teen Nutrition • Personal weight management • Kitchen sanitation and safety • Food preparation skills • Family meal preparation Junior and Senior Classes • Must focus on a career option • Advanced food preparation skills • Regional American foods/foreign foods • Meal management family/business • Entrepreneurship in the foods area • Pro Start • Restaurant and Hospitality Food Service

	Health Occupations Education An instructor endorsed in Health Occupations will have experience and knowledge in one or more of the following areas:	
Health Sciences	• Exercise Physiology • Kinesiology and Exercise Science • Kinesiotherapy/Kinesiotherapist • Medical/Clinical Assistant • Clinical/Medical laboratory assistant • Pharmacy Technician/Assistant • Pharmacy • Medical Radiologic Technology/Science - Radiation Therapist • Paramedicine	• Radiologic Technology/Science Radiographer • Physician Assistant • Athletic Trainer/Trainer • Clinical/Medical Laboratory Technician • Clinical Laboratory Science/Medical Technology/Technologist • Phlebotomy/Phlebotomist • Nursing/Registered Nurse • Osteopathic Medicine/Osteopathy • Physical Therapy/Therapist

Industrial, Manufacturing & Engineering Systems	AUTO BODY	AUTOMOTIVE TECHNOLOGY	DIESEL MECHANICS	SMALL ENGINES (also known as) POWER EQUIPMENT TECHNOLOGY
	• General Auto Body Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice- pertaining to each area and the tools/equipment involved • Metalworking Techniques • Welding • Repair Cost Estimating • Plastic Repair • Painting and Refinishing • Glass Removal and Installation • Body Parts Repair and Replacement • Frame Alignment - Conventional & Unitized Body	• General Automotive Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to individual Automotive Processes and Procedures • NATEF Automotive Standards • Engine Components • Automotive Diagnostic Equipment and Test Procedures • Precision Measurement • Brake Systems • Cooling Systems • Air Conditioning • Fuel Systems • Emission Control Systems • Electrical and Electronic Systems • Drive train - including transmission, transaxle, and differential components • Steering Systems • Suspension Systems	• General Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Diesel Theory • Two Cycle Diesel Engines • Four Cycle Diesel Engines • Diesel Diagnostic Equipment and Test Procedures • Brake System • Cooling System • Air Conditioning • Hydraulic Systems • Fuel Systems • Emission Control Systems • Electrical and Electronic Systems • Drive train - including transmission, transaxle, and differential components • Steering System • Suspension System	• General Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Basic Hand Tools • Internal Combustion Engine Theory • Four-Cycle Engine • Two Cycle Engine • Precision Measuring • Diagnostic Equipment & Test Procedures • Ignition Systems • Fuel Systems • Emission Control Systems • Governor Operation • Cooling Systems • Lubrication Systems • Transmissions • Engine Rebuild Procedures

Industrial, Manufacturing & Engineering Systems	HEAVY EQUIPMENT OPERATOR	AVIATION
	• General Shop/Worksite Safety & Related Environmental Issues • Specific Safety Practices - pertaining to the Operation and Maintenance of each piece of equipment involved in the instruction. • Because of the large variety of heavy duty equipment available, individual types of equipment will not be listed, but will be categorized as wheeled, tracked, portable and stationary related to the following areas of business: o Agriculture o Construction o Industrial Manufacturing o Mining o Petrochemical o Pipeline o Railroad	• Aircraft and Aviation Safety • Aerodynamics • Gyroscopic Instruments • Magnetic Compass • Engine Operation • Fuel System • Induction System • Electrical System • Weight & Balance • Aeronautical Charts • Navigation Methods • Flight Planning • Principles of Weather • FAA Regulations • Preflight Briefing

Industrial, Manufacturing & Engineering Systems	BUILDING MAINTENANCE	BUILDING TRADES
	• General Building Safety, Custodial Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment and chemicals involved • Approved Custodial Practice • Custodial Equipment • Floor Maintenance • Carpet Maintenance • Window Maintenance • General Building Maintenance • Restroom Maintenance	• General Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • State and Local Building Codes - commercial and residential • Blueprint Reading • Cabinetry • Carpentry • Construction • Heating, Ventilation, Air Conditioning, and Refrigeration - HVAC • Electrical Wiring • Masonry - including bricklaying, stonemason, and concrete work • Plumbing

Industrial, Manufacturing & Engineering Systems	MACHINING	METALS	WELDING
	• General Machine Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Machining Operations and Theory • Bench Metal Operations • Blueprint Reading • Layout Procedures • Precision Measurement • Metallurgy • Grinding Procedures • Fixture and Jig Set-up • Lathe Operation • Milling Machine Operation • Drill Press Operation • Computer Numerical Control - CNC • Computer Aided Manufacturing - CAM • Other machining processes are used in industry but may not be common in secondary education settings.	• General Metal Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Blueprint Reading • Layout Procedures • Fabrication • Metallurgy • Machining • Sheet Metal • Welding	• General Welding Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to individual Welding/Cutting Processes • American Welding Society Standards - AWS • ANSI/AWS Welding Symbols • Metal Fabrication • Blueprint Reading • Layout Procedures • Power Supplies • Shielded Metal Arc Welding - SMAW (stick or electric arc) • Gas Tungsten Arc Welding - GTAW (TIG) • Gas Metal Arc Welding - GMAW (MIG) • Flux Core Arc Welding - FCAW • Oxyacetylene Welding and Cutting - OAW and OAC (OFC) • Plasma Cutting – PAC • Other welding processes are used in industry but may not be common in secondary education settings.

Industrial, Manufacturing & Engineering Systems	DRAFTING	ELECTRONICS	INDUSTRIAL MECHANICS
	• General Drafting Lab Safety • Manual Drafting Methods • Computer Aided Drafting • Architectural Drafting • Technical Drafting	• General Electronics Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Electronics Industry Standards • Electrical Engineering Design • Interpretation of Electronic Schematics • Diagnostic & Test Equipment • Circuitry • Control Systems • Instrumentation • Electromagnetics • Power Generation & Transmission Systems • Computer Electronics - Microprocessing • Industrial Robot Control Systems	• General Shop/Lab Safety & Related Environmental Issues • Specific Safety Practice - pertaining to each area and the tools/equipment involved • Blueprint Reading • Schematic Reading • Electrical/Electronics • Machinery Troubleshooting • Diagnostic Equipment & Test Procedures • Hydraulic Systems • Pneumatic Systems • Machinery Repair • Preventive Maintenance • Lubrication Systems • Calibration of Automated Systems • Equipment/Machinery Installation